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MEMORANDUM FOR FILE

SUBJECT: Project Proposal by Dr.

1. The basic research concept is well planned; however, the following suggestions come to mind:

a. I do not recommend the exclusive use of dogs--actually 1,100 in number. During the past 5 years, there has been considerable research on electro-anesthesia in the U.S. with animals of all kinds. In spite of this effort, little is applicable to electro-anesthesia in the human.

b. Preliminary investigations might well begin with the dog in order to develop technics peculiar to inducing electro-anesthesia and in monitoring the condition of the animal during and after passage of electrical currents.

c. Following the use of a reasonable number of dogs--perhaps 100--the research should be directed to the rhesus monkey where the subject can be used repeatedly day after day.

d. As soon as expedient, the observations should be transferred to a few chimpanzees, which, like monkeys, can be used repeatedly, varying the electrode placement and nature of the electric currents with continuous monitoring of the animal.

Should be utilized. There

e. Finally, concurrently with observations on the chimpanzee, human subjects may be paid volunteers or perhaps patients in a psychiatric ward of a hospital.

2. Comments re numbered paragraphs in proposal are as follows:

a. I.A. - I do not think it necessary to study all possible variations of electrical currents. The most promising values of frequency and intensity should be followed up as suggested by the present observations and published results of other investigators in this field.

b. I.B. - Placement of electrodes may be very important and certainly will differ with the species of animal. The intensity of the currents will vary probably with animals species.

c. II. - General anesthesia would be more important than local effects. Again it should not be necessary to perform major surgery in order to ascertain the extent of the anesthesia induced. Why should drugs and O_2 not be used in the studies with dogs?

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d. III. - No comment.

e. IV. - Implantation of six chronic electrodes within the brain to monitor the electric current, etc. may well influence the current distribution in the brain. Perhaps models could be used for these studies.

f. V.B. - Why not consider electromyographic recordings in case the motor cortex is stimulated. Also, electromyography should be of value in determining the relaxation of muscles desired in surgery.

g. V.E. - Methods for determination of the depth of anesthesia are presently unsatisfactory. Pinching the ear is used frequently with the monkey.

g. V.H. - Post-operative observations in some cases should be extended for several days.

h. V.J. - Suggested wave form combinations seem unnecessarily complicated. Since there seems to be a species difference for animals, why plan such a complete series of wave form combinations for studies involving only dogs!

3. Concerning the budget for this proposal, too many dogs (1,100) and unnecessary surgery are planned. No continuous recording equipment for V.B. is listed--only indicating instruments.

4. If I recall correctly, the statement was made that Dr. in 2 years will obtain a PhD degree in physiology. Although Dr. is a well-qualified D.V.M. and experienced in electro-anesthesia with animals, will there be a neurophysiologist consultant in the proposed program of research? Also, an electronics engineer should be available. The Project Proposal does not list the qualifications of Dr. or any of the technical assistants associated with the program.

5. I hope my comments are not interpreted as opposing the awarding of a contract to Dr. He is highly motivated, interested and experienced in the field of electro-anesthesia and I hope that he can modify his program to include some of the suggestions listed above.